Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently amended) In a communication system having a first communication station for communicating a communication signal to a second communication station, the communication signal weighted at the first communication station with a first weight for communication to the second communication station by way of a first channel path and weighted at the first communication station with a second weight for communication to the second communication station by way of a second channel path, an ~~improvement of~~ apparatus for verifying values indicative of the first weight and the second weight, said apparatus comprising:

        a sequence estimator coupled to receive indications of a transmitted portion of the communication signal, once received at the second communication station, said sequence estimator for estimating estimated values of the first weight and of the second weight by which the transmitted portion of the communication signal is weighted, the estimated values formed by said sequence estimator selected responsive to both a memory component and a current component, the estimated values verifying the values indicative of the first weight and the second weight, <u>said sequence estimator comprising a trellis matrice defining a plurality of states, each state formed of allowable values of said first and second weights, and wherein the estimated values formed by said estimator are formed by a branch metric extending through the trellis matrice, said branch metric being determined with reference to a signal-to-noise ratio.</u>

2.   (Previously presented) The apparatus of claim 1 wherein the current component responsive, in part, to which said sequence estimator selects the estimated values of the first weight and of the second weight comprises most-recent values indicative of the first and second antenna weights.

3.   (Currently amended) The apparatus of claim [[2]] <u>1</u> wherein the memory component responsive, in part, to which said sequence estimator selects the estimated values of

the first weight and of the second weight comprises at least one set of values indicative of the first and second weights prior to the most-recent values.

4.   (Currently amended) The apparatus of claim [[3]] 1 further comprising a detector positioned at the second communication station, said detector for detecting indicia of the transmitted portion of the communication signal communicated to the second communication station.

5.   (Cancelled)

6.   (Currently amended) The apparatus of claim [[5]] 1 wherein a first state defined by the trellis matrice of said sequence estimator defines a most recent state.

7.   (Original) The apparatus of claim 6 wherein states defined by the trellis matrice other than the first state define states prior to the most-recent state.

8.   (Cancelled)

9.   (Currently amended) The apparatus of claim [[8]] 1 wherein the branch metric by which the estimated values are formed by said estimator comprises an optimal length branch metric.

10.   (Currently amended) The apparatus of claim [[8]] 1 wherein the trellis of said sequence estimator utilizes MAP metrics to determine the branch metric.

11.   (Currently amended) The apparatus of claim 1 wherein the communication system comprises a radio communication system which utilizes ~~WDCMA~~ WCDMA (wideband code division multiple access) communication techniques and wherein the values to which said sequence estimator is coupled to receive indications thereof comprise values of the first and

second antenna weights, respectively, indicative of weightings by which to weight a WCDMA signal which forms the communication signal.

12.   (Original) The apparatus of claim 11 wherein the radio communication system comprises a cellular communication system wherein the first communication station comprises a cellular base transceiver station, wherein the second communication station comprises a mobile station, and wherein the closed-loop values to which said sequence estimator is coupled to receive indications thereof comprise pilot symbol values.

13.   (Previously Presented) The apparatus of claim 12 wherein the indications of the values to which said sequences estimator is coupled to receive are representative of closed-loop values when received at the mobile station.

14.   (Previously Presented) The apparatus of claim 12 wherein the estimated values formed by said sequence estimator are used by the mobile station to decode the transmitted portion of the communication signal.

15.   (Currently amended) In a method for communicating in a communication system having a first communication station for communicating a communication signal to a second communication station, the communication signal weighted at the first communication station with a first weight for communication to the second communication station by way of a first channel path and weighted at the first communication station with a second weight for communication to the second communication station by way of a second channel path, ~~an improvement of~~ a method for verifying values indicative of the first weight and the second weight, said method comprising:

        detecting, at the second communication station, indications of a transmitted portion of the communication signal, once received at the second communication station;

        estimating estimated values of the first weight and of the second weight by which to weight the communication signal is weighted, the estimated values selected responsive to both a

memory component and a current component, the estimated values verifying the values

indicative of the first weight and the second weight;

forming a trellis matrice defined by a plurality of states, each state formed of allowable

values of said first and second weights; and

forming said estimated values by a branch metric extending through the trellis matrice,

said branch metric being determined with reference to a ratio of traffic channel amplitude to the

amplitude of the pilot channel.

16.   (Previously Presented) The method of claim 15 wherein the current component

of the estimated values estimated during said operation of estimating comprises most-recently

detected values detected most-recently during said operation of detecting.

17.   (Currently amended) The method of claim [[16]] 15 wherein the memory

component of the estimated values estimated during said operation of estimating comprises at

least one set of values indicative of the first and second weights prior to the most-recent values.

18.   (Currently amended) The method of claim [[17]] 15 wherein said operation of

estimating comprises: forming a trellis matrice defined by a plurality of states, each state formed

of allowable values of the first and second weights, and forming a maximum length branch

metric therethrough through said trellis matrice.

19.   (Previously Presented) The method of claim 15 wherein the values indicative of

the first and second weights, indications of which are detected during said operation of detecting,

are communicated to the second communication station by the first communication station and

comprise pilot symbols.

20.   (Original) The method of claim 15 wherein the communication system comprises

a radio communication system operable pursuant to a WCDMA (wideband code division

multiple access) communication scheme, wherein the first communication station comprises a

base transceiver station and the second communication station comprises a mobile station and
wherein said operations of detecting and estimating are performed at the mobile station.

21.   (New) The method of claim 15 wherein said branch metric comprises an optimal
length branch metric.

22.   (New) In a communication system having a first communication station for
communicating a communication signal to a second communication station, the communication
signal weighted at the first communication station with a first weight for communication to the
second communication station by way of a first channel path and weighted at the first
communication station with a second weight for communication to the second communication
station by way of a second channel path, an apparatus for verifying values indicative of the first
weight and the second weight, said apparatus comprising:

a sequence estimator coupled to receive indications of a transmitted portion of the
communication signal, once received at the second communication station, said sequence
estimator for estimating estimated values of the first weight and of the second weight by which
the transmitted portion of the communication signal is weighted, the estimated values formed by
said sequence estimator selected responsive to both a memory component and a current
component, the estimated values verifying the values indicative of the first weight and the
second weight, said sequence estimator comprising a trellis matrice defining a plurality of states,
each state formed of allowable values of said first and second weights, and wherein the estimated
values formed by said estimator are formed by a branch metric extending through the trellis
matrice, said branch metric being determined with reference to the equation:

$$C = (2\gamma/\sigma^2)\mathrm{Re}[h_d h_c^* w_{l,k}^*].$$